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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/392,264	09/09/1999	TOSHIHARU MORI	018656-085	9910

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EXAMINER

PARKER, KENNETH

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 02/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/392,264

Applicant(s)

MORI ET AL.

Examiner

Kenneth A Parker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 18-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-5, 7-8, 10-17, 23-24 is/are rejected.
- 7) ☒ Claim(s) 3,6 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### *Specification*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 103*

2. **Claims 1-2, 4-5, 7-8, 10-15-17, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over IBM tech disclosure NN86045000 in view of Davis et al , US patent # 6,043,861, Domash 5937115, Kawano 627026, and Hallemeier 5889900.**

Lacking from the primary reference is the cholesteric liquid crystal being a polymer. Polymer liquid crystal were well known for improved stability over non-polymer liquid crystal, and would have been obvious to use for that reason. The secondary reference(s) provide evidence of this assertion. The listed optical elements were well known for providing their particular functions, and would have been obvious for that reason. The use of two LC layer of opposite handedness was well known for enabling both handednesses of light to be used, and would have been obvious for that reason. In accordance with applicant's arguments that a slot is not shown, packing for integrated optical systems including slots for holding elements such as cholesteric filter was well known for enabling removable elements, and would have been obvious

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for that reason. Domash, Kawano and Hallemeier are cited as evidence of this assertion. These references also provide evidence that the use of quartz and diode was well known for high efficiency light sources, and obvious for that reason.

**3. Claims 1-2, 4-5, 7-8, 10-15-17, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable Stotts, US patent #3,909113, in view of Davis et al , US patent # 6,043,861, Domash 5937115, Kawano 627026, and Hallemeier 5889900.**

Lacking from the primary reference is the cholesteric liquid crystal being a polymer. Polymer liquid crystal were well known for improved stability over non-polymer liquid crystal, and would have been obvious to use for that reason. The secondary reference(s) provide evidence of this assertion. The listed optical elements were well known for providing their particular functions, and would have been obvious for that reason. The use of two LC layer of opposite handedness was well known for enabling both handednesses of light to be used, and would have been obvious for that reason. In accordance with applicant's arguments that a slot is not shown, packing for integrated optical systems including slots for holding elements such as cholesteric filter was well known for enabling removable elements, and would have been obvious

*Any assertion that something is well known is a taking of official notice.*

*Note: Any assertions that an element, practice or relationship was conventional has the incorporated motivations of the benefits of having established supply chains, well understood behavior and manufacturing methodologies.*

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***Election/Restriction***

Applicant's election with traverse of group I in Paper No. is acknowledged. The traversal is on the ground(s) that because there were errors, and because a first action had already been received the restriction was improper. This is not found persuasive because in accordance with applicant's comments on the cited prior art, a new search would have been required to apply more appropriate prior art. Applicants comments with regard to which claims should be considered part of the elected embodiment are appreciated and have been adopted.

The requirement is still deemed proper and is therefore made FINAL.

***Response to Arguments***

Applicant's arguments filed have been fully considered but they are not persuasive. . Several of the references show transparent members where there is a cholesteric liquid crystal in the transparent member. As the transparent member can be used as a waveguide from any direction, the dividing of the waveguide must be met. Further, to clarify the structure, additional secondary references have been cited.

***Allowable Subject Matter***

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Claims 3,6 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The reason for the indication of allowable subject matter is because of the in-situ polymerization of the cholesteric liquid crystal. Although the limitation is a process one, if the cholesteric were formed elsewhere and transferred, the structure would reflect that (such as the cholesteric would be on or between substrates.

*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Parker whose telephone number is (703) 305-6202. The fax phone number for this Group is (703) 308-7722. Any inquiry of a general nature or relating to the status of this application or preceding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

February 10, 2003

  
KENNETH ALLEN PARKER  
PRIMARY PATENT EXAMINER  
GAU 2871